

CLAIMS

1. Cosmetic and/or dermatological composition intended for treating keratin fibres, in particular 5 human keratin fibres and more particularly human hair, comprising, in a support which is suitable for keratin fibres:

10 (a) at least one enzyme of 2-electron oxidoreductase type in the presence of at least one donor for the said enzyme,

(b) at least one aminosilicone.

2. Composition according to Claim 1, characterized in that the 2-electron oxidoreductase is chosen from uricases of animal, microbiological or biotechnological 15 origin.

3. Composition according to Claim 1 or 2, characterized in that the 2-electron oxidoreductase(s) represent(s) from 0.01 to 20% by weight relative to the total weight of the composition.

20 4. Composition according to Claim 3, characterized in that the 2-electron oxidoreductase(s) represent(s) from 0.1 to 5% by weight relative to the total weight of the composition.

5. Composition according to Claim 2, characterized 25 in that the donor (or substrate) for the said 2-electron oxidoreductase is chosen from uric acid and its salts.

6. Composition according to any one of the preceding claims, characterized in that the donor(s) represent(s) from 0.01 to 20% by weight relative to the 30 total weight of the composition.

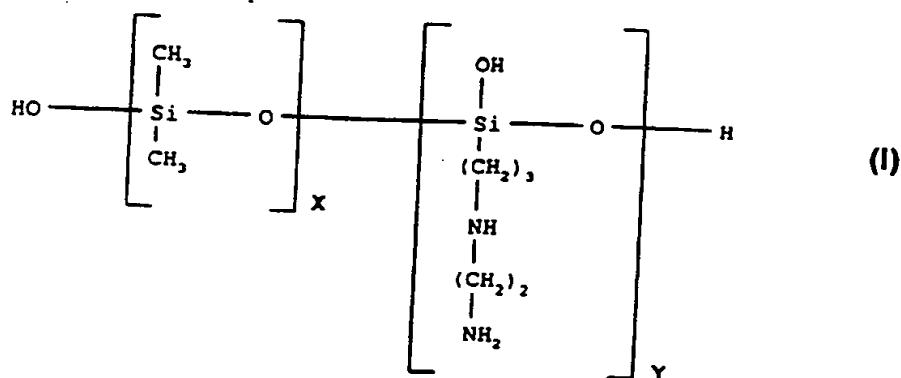
7. Composition according to Claim 6, characterized in that the donor(s) represent(s) from 0.1 to 5% by weight relative to the total weight of the composition.

35 8. Composition according to any one of Claims 1 to 7, characterized in that the aminosilicone is chosen

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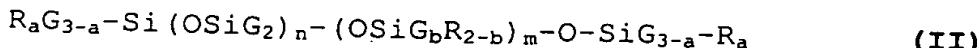
from:

(a) the polysiloxanes corresponding to the formula:



in which  $x$  and  $y$  are integers dependent on the molecular weight, generally such that the said number-average molecular weight is between 5000 and 500,000 approximately;

(b) cationic silicone polymers corresponding to the formula:



in which:

15 G is a hydrogen atom or a phenyl, OH or C<sub>1</sub>-C<sub>8</sub> alkyl, for example methyl group.

a denotes the number 0 or an integer from 1 to 3, in particular 0.

$b$  denotes 0 or 1, and in particular 1

20 m and n are numbers such that the sum  $(n + m)$  can range especially from 1 to 2000 and in particular from 50 to 150, it being possible for n to denote a number from 0 to 1999 and in particular from 49 to 149.

25 particular from 1 to 10:

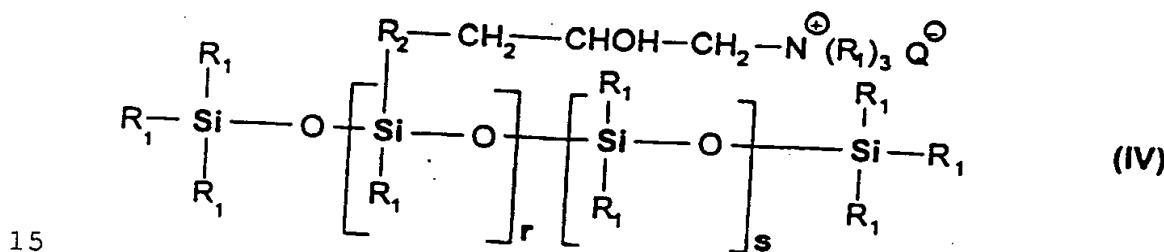
R is a monovalent radical of formula  $-C_qH_{2q}L$  in which q is a number from 2 to 8 and L is an optionally quaternized amine group chosen from the groups:

- $-\text{N}(\text{R}')-\text{CH}_2-\text{CH}_2-\text{N}(\text{R}')_2$
- $-\text{N}(\text{R}')_2$
- $-\text{N}^{\oplus}(\text{R}')_3\text{A}^-$
- $-\text{N}^{\oplus}(\text{R}')_2(\text{H})\text{A}^-$
- 5  $-\text{N}^{\oplus}(\text{R}')(\text{H})_2\text{A}^-$

$-\text{N}(\text{R}')-\text{CH}_2-\text{CH}_2-\text{N}^{\oplus}(\text{R}')(\text{H})_2\text{A}^-$ ;

in which  $\text{R}'$  can denote hydrogen, phenyl, benzyl or a monovalent, saturated hydrocarbon-based radical, for example an alkyl radical containing from 1 to 20 carbon atoms, and  $\text{A}^-$  represents a halide ion such as, for example, fluoride, chloride, bromide or iodide.

10 (c) cationic silicone polymers corresponding to the formula:



15 in which

$\text{R}_1$  represents a monovalent hydrocarbon-based radical containing from 1 to 18 carbon atoms, and in particular a  $\text{C}_1\text{-C}_{18}$  alkyl radical or a  $\text{C}_2\text{-C}_{18}$  alkenyl radical, for example methyl;

20  $\text{R}_2$  represents a divalent hydrocarbon-based radical, in particular a  $\text{C}_1\text{-C}_{18}$  alkylene radical or a  $\text{C}_1\text{-C}_{18}$ , for example  $\text{C}_1\text{-C}_8$ , divalent alkylenoxy radical;

25  $\text{Q}^-$  is a halide ion, in particular chloride;

$\text{r}$  represents an average statistical value from 2 to 20 and in particular from 2 to 8;

30  $\text{s}$  represents an average statistical value from 20 to 200 and in particular from 20 to 50.

30 9. Composition according to any one of Claims 1 to

8, characterized in that the concentration of aminosilicone ranges from 0.05% to 10% by weight relative to the total weight of the composition, and preferably between 0.1 and 5%.

5 10. Ready-to-use composition according to any one of Claims 1 to 9, for the oxidation dyeing of keratin fibres, and in particular human keratin fibres such as the hair, of the type also comprising, in a medium which is suitable for keratin fibres, at least one 10 oxidation base and, optionally, one or more couplers.

11. Composition according to Claim 10, characterized in that the oxidation bases are chosen from para-phenylenediamines, double bases, ortho- or para-aminophenols and heterocyclic bases, as well as the addition salts of these compounds with an acid.

15 12. Composition according to Claim 10 or 11, characterized in that the oxidation bases are present in concentrations ranging from 0.0005 to 12% by weight relative to the total weight of the composition.

20 13. Composition according to Claim 10, characterized in that the couplers are chosen from meta-phenylenediamines, meta-aminophenols, meta-diphenols and heterocyclic couplers, and the addition salts of these compounds with an acid.

25 14. Composition according to Claim 10 or 13, characterized in that the couplers are present in concentrations ranging from 0.0001 to 10% by weight relative to the total weight of the composition.

15. Composition according to Claim 11 or 13, 30 characterized in that the addition salts with an acid for the oxidation bases and the couplers are chosen from the hydrochlorides, hydrobromides, sulphates, tartrates, lactates and acetates.

16. Composition according to any one of Claims 10 35 to 15, characterized in that it also contains direct dyes.

17. Composition according to any one of Claims 1 to 16, characterized in that the medium which is suitable for the keratin fibres (or support) consists of water or of a mixture of water and at least one organic solvent.

18. Composition according to Claim 17, characterized in that the organic solvents can be present in proportions preferably ranging from 1 to 40% by weight relative to the total weight of the composition, and even more preferably ranging from 5 to 30% by weight.

19. Composition according to any one of Claims 1 to 18, characterized in that the pH ranges from 5 to 11 and preferably from 6.5 to 10.

20. Composition according to any one of Claims 1 to 19, characterized in that it also contains at least one cosmetic adjuvant used conventionally in compositions for dyeing, permanently reshaping or bleaching the hair, chosen from the group consisting of anionic, cationic, nonionic, amphoteric or zwitterionic surfactants or mixtures thereof, anionic, cationic, nonionic, amphoteric or zwitterionic polymers or mixtures thereof, inorganic or organic thickeners, antioxidants, enzymes other than the 2-electron oxidoreductases, penetration agents, sequestering agents, fragrances, buffers, dispersing agents, conditioners, film-forming agents, preserving agents and opacifiers.

21. Process for dyeing keratin fibres, and in particular human keratin fibres such as the hair, characterized in that at least one ready-to-use dye composition as defined in any one of Claims 10 to 20 is applied to the said fibres, for a period which is sufficient to develop the desired coloration.

22. Process according to Claim 21, characterized in that it includes a first step which consists in separately storing, on the one hand, a composition (A)

comprising, in a medium which is suitable for dyeing, at least one oxidation base and optionally at least one coupler as defined in any one of the preceding claims, and, on the other hand, a composition (B) containing, 5 in a medium which is suitable for keratin fibres, at least one enzyme of 2-electron oxidoreductase type in the presence of at least one donor for the said enzyme as defined in any one of the preceding claims, and then 10 in mixing them together at the time of use, before applying this mixture to the keratin fibres; composition (A) or composition (B) containing the aminosilicone as defined in the preceding claims.

23. Multi-compartment dyeing device or "kit", characterized in that it contains a first compartment 15 containing composition (A) as defined in Claim 22 and a second compartment containing composition (B) as defined in Claim 22.

24. Process for treating keratin fibres, in particular the hair, in order to obtain a permanent 20 reshaping of this hair, in particular in the form of permanent-waved hair, this process comprising the following steps: (i) a reducing composition is applied to the keratin fibres to be treated, the keratin substance being placed under mechanical tension before, 25 during or after the said application, (ii) the keratin substance is optionally rinsed, (iii) an oxidizing composition as defined in any one of Claims 1 to 9 and 17 to 20 is applied to the optionally rinsed keratin substance, (iv) the keratin substance is optionally 30 rinsed again.

25. Process for treating keratin fibres, in particular the hair, in order to bleach them, this process comprising the application of an oxidizing composition as defined in any one of Claims 1 to 9 and 35 17 to 20 optionally containing an auxiliary oxidizing agent and a second step of rinsing the keratin fibres.

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